



[4910-13-P]

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

**[Docket No. FAA-2011-0959; Directorate Identifier 2011-NE-25-AD]**

**RIN 2120-AA64**

**Airworthiness Directives;** Rolls-Royce plc (RR) RB211 Trent 800 Series Turbofan Engines

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Notice of proposed rulemaking (NPRM).

**SUMMARY:** We propose to adopt a new airworthiness directive (AD) for the products listed above. This proposed AD results from mandatory continuing airworthiness information (MCAI) issued by an aviation authority of another country to identify and correct an unsafe condition on an aviation product. The MCAI describes the unsafe condition as:

Routine inspections have revealed cracking on the head sections of two Trent 800 front combustion liners.

We are proposing this AD to prevent uncontained engine failure and damage to the airplane.

**DATES:** We must receive comments on this proposed AD by [insert date 60 days after date of publication in the FEDERAL REGISTER].

**ADDRESSES:** You may send comments by any of the following methods:

- Federal eRulemaking Portal: Go to <http://www.regulations.gov> and follow the instructions for sending your comments electronically.

- Mail: Docket Management Facility, U.S. Department of Transportation, 1200 New Jersey Avenue SE., West Building Ground Floor, Room W12-140, Washington, DC 20590-0001.

- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

- Fax: (202) 493-2251.

Contact Rolls-Royce plc, P.O. Box 31, Derby, DE24 8BJ, United Kingdom; phone: 011 44 1332 242424; fax: 011 44 1332 249936; e-mail: [http://www.rolls-royce.com/contact/civil\\_team.jsp](http://www.rolls-royce.com/contact/civil_team.jsp); or Web: <https://www.aeromanager.com>., for the service information identified in this proposed AD.

### **Examining the AD Docket**

You may examine the AD docket on the Internet at <http://www.regulations.gov>; or in person at the Docket Operations office between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this proposed AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Operations office (phone: (800) 647-5527) is the same as the Mail address provided in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

**FOR FURTHER INFORMATION CONTACT:** Alan Strom, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 12 New England Executive Park; Burlington, MA 01803; e-mail: [alan.strom@faa.gov](mailto:alan.strom@faa.gov); phone: 781-238-7143; fax: 781-238-7199.

## **SUPPLEMENTARY INFORMATION:**

### **Comments Invited**

We invite you to send any written relevant data, views, or arguments about this proposed AD. Send your comments to an address listed under the ADDRESSES section. Include “Docket No. FAA-2011-0959; Directorate Identifier 2011-NE-25-AD” at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this proposed AD. We will consider all comments received by the closing date and may amend this proposed AD based on those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact with FAA personnel concerning this proposed AD. Using the search function of the Web site, anyone can find and read the comments in any of our dockets, including, if provided, the name of the individual who sent the comment (or signed the comment on behalf of an association, business, labor union, etc.). You may review the DOT's complete Privacy Act Statement in the Federal Register published on April 11, 2000 (65 FR 19477-78).

### **Discussion**

The European Aviation Safety Agency (EASA), which is the Technical Agent for the Member States of the European Community, has issued EASA Airworthiness Directive 2011-0080, dated May 6, 2011 (referred to after this as “the MCAI”), to correct an unsafe condition for the specified products. The MCAI states:

Routine inspections have revealed cracking on the head sections of two Trent 800 front combustion liners.

This condition, if not detected and corrected, could lead to hot gas breakout with subsequent downstream component release potentially leading to uncontained high energy debris, possibly resulting in damage to the aeroplane or injury to persons on the ground.

We are proposing this AD to prevent uncontained engine failure and damage to the airplane.

### **Relevant Service Information**

Rolls-Royce plc has issued Alert Service Bulletin RB.211-72-AG456, dated September 9, 2010. The actions described in this service information are intended to correct the unsafe condition identified in the MCAI.

### **FAA's Determination and Requirements of This Proposed AD**

This product has been approved by the aviation authority of the United Kingdom, and is approved for operation in the United States. Pursuant to our bilateral agreement with the United Kingdom, they have notified us of the unsafe condition described in the MCAI and service information referenced above. We are proposing this AD because we evaluated all information provided by EASA, and determined the unsafe condition exists and is likely to exist or develop on other products of the same type design.

### **Costs of Compliance**

We estimate that this proposed AD would affect about 125 products of U.S. registry. We also estimate that it would take about 10 work-hours per product to inspect and 10 additional work-hours for those combustion liners that require replacement. The average labor rate is \$85 per work-hour. Required parts would cost about \$525,000 per product. We expect that four front combustion liners will require replacement. Based on

these figures, we estimate the cost of the proposed AD on U.S. operators to be \$2,209,650.

### **Authority for This Rulemaking**

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. "Subtitle VII: Aviation Programs," describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in "Subtitle VII, Part A, Subpart III, Section 44701: General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

### **Regulatory Findings**

We determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this proposed regulation:

1. Is not a "significant regulatory action" under Executive Order 12866;

2. Is not a “significant rule” under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979); and

3. Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

We prepared a regulatory evaluation of the estimated costs to comply with this proposed AD and placed it in the AD docket.

#### **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

#### **The Proposed Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

#### **PART 39 - AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

#### **§ 39.13 [Amended]**

2. The FAA amends § 39.13 by adding the following new AD:

**Rolls-Royce plc:** Docket No. FAA-2011-0959; Directorate Identifier 2011-NE-25-AD.

#### **(a) Comments Due Date**

We must receive comments by [insert date 60 days after date of publication in the FEDERAL REGISTER].

#### **(b) Affected Airworthiness Directives (ADs)**

None.

**(c) Applicability**

This AD applies to Rolls-Royce plc (RR) RB211 Trent 800 turbofan engines, all models, all serial numbers.

**(d) Reason**

(1) This AD results from mandatory continuing airworthiness information (MCAI) issued by an aviation authority of another country to identify and correct an unsafe condition on an aviation product. The MCAI describes the unsafe condition as:

Routine inspections have revealed cracking on the head sections of two Trent 800 front combustion liners.

This condition, if not detected and corrected, could lead to hot gas breakout with subsequent downstream component release potentially leading to uncontained high energy debris, possibly resulting in damage to the aeroplane or injury to persons on the ground.

(2) We are issuing this AD to prevent uncontained engine failure and damage to the airplane.

**(e) Actions and Compliance**

Unless already done, do the following actions.

**(f) Initial Inspection**

(1) Within 1,000 flight cycles (FCs) after the effective date of this AD, inspect the front combustion liner head section for cracking. Use paragraph 3.A, except for 3.A.(1)(a)(i), of the On-Wing Accomplishment Instructions of RR Alert Service Bulletin (ASB) RB.211-72-AG456, dated September 9, 2010, to do your inspections.

(2) If you find cracking, remove the front combustion liner head section from service at the next shop visit. Until the next shop visit, take the corrective actions listed in Table 1 of this AD, as applicable.

**Table 1 – Inspection Findings and Follow-on Actions**

<b>Inspection Findings</b>	<b>Action(s) and Compliance Time(s)</b>
(i) Cumulative crack length up to 150 mm (up to 2 heatshields).	Reduce the inspection intervals to 250 FCs.
(ii) Cumulative crack length 150 mm to 300 mm (up to 4 heatshields).	Reduce the inspection intervals to 100 FCs.
(iii) Cumulative crack length 300 mm to 450 mm (up to 6 heatshields).	Remove the engine within 50 FCs.
(iv) Cumulative crack length 450 mm to 900 mm (up to 12 heatshields).	Replace the engine within 5 FCs.
(v) Cumulative crack length greater than 900 mm (more than 12 heatshields).	Replace the engine before next flight.

**(g) Repetitive Inspections**

(1) At intervals not to exceed 2,000 FCs, inspect the front combustion liner head section for cracking. Use paragraph 3.A, except for 3.A.(1)(a)(i), of the On-Wing Accomplishment Instructions of RR ASB RB.211-72-AG456, dated September 9, 2010, to do your inspection.

(i) If you find cracking, remove the front combustion liner head section at the next shop visit. Until the next shop visit, take the corrective actions as detailed in Table 1 of this AD, as applicable.

(2) For engines not found to have cracks in the front combustion liner head section in accordance with paragraphs (f)(1), (f)(2), or (g)(1) of this AD, at every shop visit after the effective date of this AD, inspect the front combustion liner head section for cracking. Use paragraph B.(2), except B.(2)(a)(i), of the In-shop Accomplishment Instructions of RR ASB RB.211-72-AG456, dated September 9, 2010, to do the inspections.



(3) Accomplishment of a shop visit inspection as required by paragraph (g)(2) of this AD may substitute for the accomplishment of an on-wing inspection as required by paragraph (f)(1) or (g)(1) of this AD.

**(h) Definition of Shop Visit**

For the purpose of this AD, the term shop visit means the induction of an engine into the shop for maintenance where the front combustion liner is exposed or when the engine has been removed from service as a result of paragraph (f)(2) or (g)(1)(i) of this AD.

**(i) Alternative Methods of Compliance (AMOCs)**

The Manager, Engine Certification Office, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19.

**(j) Related Information**

(1) Refer to MCAI Airworthiness Directive 2011-0080, dated May 6, 2011, and RR ASB RB.211-72-AG456, dated September 9, 2010, for related information. Contact Rolls-Royce plc, P.O. Box 31, Derby, DE24 8BJ, United Kingdom; phone: 011 44 1332 242424; fax: 011 44 1332 249936; e-mail: [http://www.rolls-royce.com/contact/civil\\_team.jsp](http://www.rolls-royce.com/contact/civil_team.jsp); or Web: <https://www.aeromanager.com>, for a copy of this service information.

(2) Contact Alan Strom, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 12 New England Executive Park; Burlington, MA 01803; e-mail: [alan.strom@faa.gov](mailto:alan.strom@faa.gov); phone: 781-238-7143; fax: 781-238-7199, for more information about this AD.

Issued in Burlington, Massachusetts, on November 10, 2011.

Peter A. White,  
Manager, Engine & Propeller Directorate,  
Aircraft Certification Service.

[FR Doc. 2011-30060 Filed 11/23/2011 at 8:45 am; Publication Date: 11/25/2011]